ECDD Training Academy

READABILITY FOR JOB ORDERS

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EMPLOYMENT & CAREER DEVELOPMENT DIVISION

EMPLOYMENT SECURITY DEPARTMENT

Employment Security Department
WASHINGTON STATE

Readability

The “readability” of written material can be defined as the ease with which it can be read and understood by average readers. But measures of readability, or reading levels, come in a variety of flavors – over 200 versions at last count! The readability formulas, or indexes, described below are among the most common and universally used. All rely on counting characters, syllables, words and sentences in one or more samples of text. Some also factor in the proportion of words over a given length or syllable count, or compare a passage’s vocabulary against some standardized list of ‘basic’ words. Each index then applies its own unique formula to these counts, to come up with a score. Remember that these tests merely measure how easily readers will understand what you’ve written; they do not make fixes or suggestions to improve that readability.

After covering the various readability measures, and the websites which will enable you to apply them, we’ll look at how the issue of readability applies to job orders created in our Go2WorkSource.com website.

The Indexes

Every test after the first one below attempts to arrive at a realistic reading comprehension level, by indicating either the age or U.S. schools grade level thought necessary to take in and understand written text. The link associated with each test below is to a Wikipedia article which provides the actual defining equation, discusses that formula in more detail, and goes into its history and rationale. For a general discussion of this topic, see the main article on Readability.

In the Flesch Reading Ease test, higher scores indicate material that’s easier to read, lower scores more difficult. For example, scores of 90 to 100 are considered easily understandable by average 11-year-old students; 60 to 70 by 13- to 15-year-olds; and 0 to 30 by university graduates. Developed by the pioneering Rudolf Flesch (*The Art of Plain Talk*, 1946; *Why Johnny Can’t Read*, 1955).

The Flesch-Kincaid Grade Level, first formulated by J. Peter Kincaid in 1975, translates the Reading Ease score above into a U.S. schools grade level.

The Dale-Chall Readability Formula, dating from 1948, was for several decades considered the most valid and reliable of its kind for determining the readability of texts, primarily in an educational context. This formula uses average sentence length as a factor, like Flesch-Kincaid, but also takes into account the percentage of words *not* found on a list of 3000 “easy” words.

The Coleman-Liau Index, like the ARI below, but none of the other reading level indexes, relies on *character count*, rather than syllables per word, to identify "difficult" words which should be avoided. This makes it simpler and more repeatable, as characters are more readily and accurately counted by computer programs than are syllables.

The Automated Readability Index (ARI), like the Coleman-Liau, is designed to gauge understandability of text by taking into account only the numbers of characters, words and sentences in the selection. Its formula, however, differs from that of Coleman-Liau in just which ratios between these elements are considered most significant.

The Fry Readability Formula arrives at a graded reading level by sampling three 100-word passages in English texts, and plotting the average number of sentences per passage against the average number of syllables.

The Gunning Fog Index, developed in 1952, does its computation in part by measuring the ratio of complex words to words in general. A "complex word" is considered to be any word of three or more syllables (omitting proper nouns, familiar jargon, compound words or common suffixes). It's intended to estimate the number of years of formal education needed to understand the text *at a first reading*. Proponents maintain that texts for a wide audience generally need a fog index less than 12, and that texts requiring near-universal understanding should have an index of less than 8.

SMOG is a 1969 variation on the Gunning Fog Index, and stands for **S**imple **M**easure **o**f **G**obbledygook. This readability formula estimates years of education needed to *fully understand* a piece, i.e., at 100% comprehension. Like the Fry, it relies on taking three disparate samples of text, rather than a single selection. SMOG also achieves more accurate syllable counts by using a comprehensive dictionary which includes syllable length, rather than estimating by word length, number of vowels, etc., as other indexes do.

The Bog Index, a readability measure associated with StyleWriter, a "plain language" editing software, uses a 200,000-word dictionary of English words, graded by frequency of use and ease of understanding, rather than relying on syllable counts or word lengths. This measure also attempts to evaluate *good* writing style (called "Pep") rather than just poor writing habits.

Clear is a new tool which estimates grade level by giving *each* word *and* sentence a score corresponding to the years of education needed to understand them easily. These are then combined to reach a single score for the entire text. Both words and sentences are normed on massive databases of grade-specific material, and books written specifically for certain grade levels. The actual "CLEAR Sentence Grade" delivered is expressed as reader age, not school grade level.

Testing your text

Microsoft Word (Office 2007 and above) has a built-in readibility tool. For detailed instructions on how to access this tool, see the Quick Guide for Checking Grade Level / Readability on InsideESD's website. This process will return both the Flesch Reading Ease score and the Flesch-Kincaid Grade Level for a selected text. It also provides the percentage of passive sentences in the text sample, useful in following the "Plain Talk" principle of minimizing the passive voice whenever possible.

As useful as this tool is, it *does* apply only to Word documents; and, even there, requires you to go through all of the SpellCheck steps for the chosen text, before reaching the readability measure. There are, however, a number of web-based utilities which allow simple cut-&-paste testing of written material, and return scores for one or more of the readability measures discussed above. Try out some of the following:

EditCentral.com's Style & Diction checker (ARI, Coleman-Liau, Flesch, Flesch-Kincaid, Gunning fog index and SMOG index)

Online-Utility.org's Readability Calculator (ARI, Flesch-Kincaid, Coleman-Liau and SMOG)

Read-able.com's "The Readability Test Tool" (ARI, Coleman-Liau, Flesch, Flesch-Kincaid, Gunning fog index and SMOG index for pasted text; can also test the readability of a webpage, by simply entering its URL)

Gunning Fog Index – a stand-alone tool for this index only, found on Simbon.madpage.com.

Text statistics and readability analyzer, from Multioolbox.com (ARI, Coleman-Liau, Flesch, Flesch-Kincaid, Gunning Fog & SMOG Grade)

Words Count's Clear Calculator (CLEAR analysis only)
Words Count's SMOG Calculator (SMOG *Index* only)
Words Count's Readability Calculator (ARI, Coleman-Liau, Dale-Chall Index & Grade, Flesch, Flesch-Kincaid, Gunning-Fog Index, SMOG *Grade*, and Spache Index)

Intervention Central's CBM Maze Passage Generator (ARI, Coleman-Liau, Dale-Chall, Flesch Reading Ease, Flesch-Kincaid, Fog Index, FORCAST, Lix Formula & SMOG)

Standards-schmandards.com's Readability index calculator (Flesch, Flesch-Kincaid, four European languages)

Dave Child's Text Readability Scores (ARI, Coleman-Liau, Flesch, Flesch-Kincaid, Gunning-fog and SMOG)

Blue Centauri Consulting's Writing Sample Analyzer (Flesch, Flesch-Kincaid, Gunning-Fog)

Considerations

Any writing sample you check against some fraction of the even dozen sites given above will get you back a considerable *range* of scores. This is the case even when your submission is supposedly weighed against the same readability index! The prime reason for this? The wide variation in the *algorithms used by the sites* to measure whatever elements a particular readability index takes into account.

- **Sentences:** Virtually all the indexes consider long sentences to be barriers to readability all by themselves. Many also count the number of sentences in a sample of text in order to measure how many complex words are found in the average sentence.

  Some tools use only so-called terminal punctuation (periods and question/exclamation marks) to count sentences. Others consider colons, semi-colons or line breaks, on the assumption that it's units of thought (like clauses and bullet points) that should be counted. So, if your sample includes bulleted material – usually considered *helpful* in clearly conveying information – expect it to be *down*graded on a readability scale by any calculator which "waits for the period." Conversely, you'll be *up*graded by those counting each bullet as a sentence-equivalent (you can get the same effect by putting a period at the end of each bullet).

- **Words:** It seems common sense that readability would suffer from using too many complex words. Right? Question: what *is* a "complex word?" Different indexes define the concept differently – using word *length* measured in either letters or syllables; *inclusion* on lists of "unfamiliar", "difficult" or "uncommon" words; or *absence* from lists of "common" or "basic" ones.

- **Syllables:** When it's the number of syllables (usually three or more) which supposedly makes a word "complex" – regardless of how well-recognized the word itself is – there still remains the question of how to *count* those syllables. This isn't easy in a language like English, with its variable spelling, multitudes of homographs, homophones, etc.

  So, in computing your score on indexes which equate average syllables-per-word with complexity, some sites use vowel-counting algorithms, others tables which deduce syllable counts from word length, or more arcane methods. Only SMOG achieves fairly accurate and repeatable syllable counts. It does this by referring to a 200,000-word dictionary, relying on the syllable count assigned each word by professional lexicographers. And yet some sites will claim to compute the SMOG index for you by using the SMOG formula, but substituting their own algorithm for that dedicated look-up function!

Readability in action

The following text is a sample paragraph from the narrative of an actual "**WA…**" job order posted to Go2WorkSource.com**:**

"A local organization whose mission is to increase public awareness, support, and hope for those affected by brain injury through education, assistance, and advocacy is seeking a combined Resource Manager/Support Group Coordinator to work with survivors, their caregivers and families to assess their current resources and needs and to provide support in accessing additional resources. The Resource Manager is responsible for communicating with other TBI Resource Center Staff on the status of their Clients' progress to ensure the most effective level of care is provided to Clients and the TBI Resource Center executes all functions to provide seamless care to all who utilize its services. During the first months this service will be provided solely to adult survivors (18+), but within 9 months Pediatric Survivors will also be included in service group."

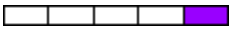
The raw breakdown of this text is as follows:

861 characters
730 non-space characters
714 letters/numbers
132 words
23 complex words

221 syllables
3 sentences
5.41 characters per word
1.67 syllables per word
44 words per sentence

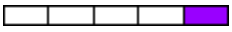
These data yield the following readability scores:

Flesch reading ease score:



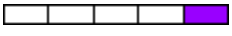
20.5

Automated readability index:



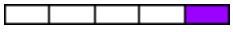
26

Flesch-Kincaid grade level:



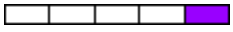
21.3

Gunning fog index:



24.6

SMOG index:



18.2

These scores all rate the selection tested as Very Difficult to comprehend, equivalent to placement at a college graduate to post-doctoral level. The most significant contribution to these ratings is the average sentence length. At 44 words, that is twice the *maximum* recommended length for readable text.

The selection below is for the same position, but has been rewritten for greater ease of understanding.

"We are a local organization promoting public awareness, support, and hope for brain injury victims through education, assistance, and advocacy. We are seeking a Resource Manager / Support Group Coordinator to work with survivors, caregivers and families. Duties include assessing resources and needs, and helping victims to access other resources. The Resource Manager also coordinates with other staff members regarding their clients' progress, to ensure seamless care to all. At first, this service will be provided solely to adult survivors, but will be extended to pediatric survivors within nine months."

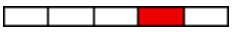
This time, the data look like this:

610 characters
519 non-space characters
503 letters/numbers
90 words
17 complex words

162 syllables
5 sentences
5.59 characters per word
1.8 syllables per word
18 words per sentence

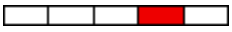
Notice that, though the syllables per word count actually increased slightly, the sentence length has been more than cut in half. Total words and "complex words" have also been reduced. Using the same fomulas, we now see the readability scores (taken from EditCentral.com's Style & Diction checker) come out like this:

Flesch reading ease score:



36.3

Automated readability index:

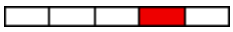


13.9

Flesch-Kincaid grade level:

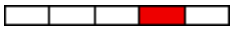
12.7

Gunning fog index:



14.8

SMOG index:



13.1

These scores place the readability of the text at the comfort level of a high school senior to college sophomore. Since the position advertised requires a minimum of a BA degree, it looks as if we've now placed our text well within reach of our potential audience.

Below are ratings of the same two text samples by a different online readability checker (Readable.com's "The Readability Test Tool"). Note that both the raw data and the computed scores differ from those at the first site. (They can't even seem to agree on sentence counts!) However – and this is the important point – both sites agree regarding the relative difficulty of the first version, and the greater readability of the edited one.

This page has an average grade level of about 17.

It should be easily understood by 22 to 23 year olds.

Readability Indices

Flesch Kincaid Reading Ease	31.9
Flesch Kincaid Grade Level	17.1
Gunning Fog Score	19.3
SMOG Index	14.1
Automated Readability Index	20.4

Text Statistics

No. of sentences	4
No. of words	133
No. of complex words	24
Percent of complex words	18.05%
Average words per sentence	33.25
Average syllables per word	1.67

This page has an average grade level of about 13.

It should be easily understood by 18 to 19 year olds.

Readability Indices

Flesch Kincaid Reading Ease	45.7
Flesch Kincaid Grade Level	11.4
Gunning Fog Score	13.4
SMOG Index	10.1
Automated Readability Index	13.9

Text Statistics

No. of sentences	5
No. of words	90
No. of complex words	15
Percent of complex words	16.67%
Average words per sentence	18.00
Average syllables per word	1.69

So, what's the significance of readability measures in a WorkSource office setting? For Job Orders posted by the facility, it doesn't necessarily mean that hard-to-read narratives *can't be understood* (with effort). However, it can and does mean that they *won't get read* as often. We advise job seekers that their résumés won't draw attention if they're not easily readable. It would be arrogant to think that we don't have to follow the same rules with our own material!

Readability concerns should also apply to any other printed material distributed within a WorkSource Center or Affiliate, from pamphlets to desk cards to event posters to everyday lobby signage. In fact, in the interests of promoting better communications, it even extends to the spoken word!

“What’d He Say?”

Most of the factors these indexes take into account – length of sentences, percentage of lengthy / complex / unfamiliar words, etc. – also affect the “understandibility” of *orally*-delivered material of all kinds. This is particularly the case when:

- Material is delivered verbally only, with no opportunity for listeners to view a printed version of what’s being said;
- The venue is noisy, has otherwise bad acoustics, or is so laid out that not everyone has line-of-sight to the speaker;
- The audience has differing levels of spoken English comprehension.

Consider what set material you convey verbally to job seekers in your office, whether daily or weekly. Announcements, job readiness training, job clubs, Job Hunter modules, job referral reporting instructions, etc. If you reduced them to the written word, and measured them by one of these online readability engines….do you know how they’d score? Don’t you think you should find out?

The readability scores below are measures taken on the first five pages of this publication**:**

The Readability Test Tool

Let's make the unreadable readable

Readability Results for directly input

Web Address: directly input

> This page has an average grade level of about 12.
>
> It should be easily understood by 17 to 18 year olds.

Tweet this result!

Readability Indices

Flesch Kincaid Reading Ease	52.6
Flesch Kincaid Grade Level	11.1
Gunning Fog Score	12.8
SMOG Index	10.1
Coleman Liau Index	13.5
Automated Readability Index	12.4

Text Statistics

No. of sentences	79
No. of words	1646
No. of complex words	241
Percent of complex words	14.64%
Average words per sentence	20.84
Average syllables per word	1.57